EOSDIS Test System (ETS) for Aura Support – MPS Requirements Discussion

December 5, 2000 Meeting Minutes

Executive Summary

The ETS Multimode Portable Simulator (MPS) development team met with ESDIS project personnel and MPS users on 12/5/00 to discuss proposed MPS/Aura simulator requirements. The requirements are nearly identical to the MPS/Aqua requirements, which reflects the commonality between the TRW-built Aura and Aqua spacecraft.

No significant changes to the MPS design will be required to handle the anticipated MPS/Aura upgrades. Separate MPS Aura spacecraft (SCAura) and EOSGS "modules" will be created, based on the existing MPS Aqua (SCPM1 and GSPM1) modules, which will then be modified for Aura required changes.

The presented set of MPS/Aura requirements will be baselined by the ETS Discrepancy Review Board (DRB). Any requested modifications and additions to these requirements will be considered by the ETS DRB.

Detailed Summary

An ETS MPS/Aura Requirements Discussion was held on 12/5/00 with ESDIS project personnel and MPS users as a kickoff to begin the development cycle for the MPS simulator updates needed for Aura support. The MPS/Aqua (PM-1) simulator requirements had been modified minimally for Aura to reflect a few known spacecraft-related changes and to incorporate a few general simulator feature enhancements. The draft MPS/Aura requirements set was distributed to invitees prior to the discussion, along with the meeting materials package. They can both be found on the ETS documentation web page (see http://esdis-it.gsfc.nasa.gov/ETS/etsdoc.html).

Most of the modifications for Aura that were proposed by the MPS team appeared to be generally acceptable to the user community. Denver MPS users requested that sine and cosine functions be added to the set of scenario script supported functions. GSFC users requested that the MPS be able to ingest rate buffered data files from external data sources (e.g., instrument data and spacecraft data extracted from EDOS data processing systems) and be able to update the spacecraft time field for MPS playback of the user-provided data. The MPS development team will assess the impact of including these additional capabilities.

A noted omission from the proposed MPS/Aura Requirements was detail of specific spacecraft differences between Aqua and Aura. Ann Habeger and others gave examples of spacecraft differences including segmented telemetry data over different packets, function codes, sequence flags, command data packets, packet sequences in data transmission, and associated project data base (PDB) changes. Some changes could be extracted from information contained in the Aura space to ground ICD. Ron Jones and Ernest Caneveri said that EMOS requirements were undergoing review for changes needed for Aura support. They had previously provided the MPS

development team with an initial set of anticipated differences. Once these EMOS changes are more fully identified and understood, the MPS development team will be alerted because it is likely that new MPS capabilities would be needed to verify the EMOS-required modifications. The list of EMOS differences for Aura are expected to be updated during January, at which time, additional requirements may need to be levied on the MPS.

There was discussion related to the proposed MPS release schedule. The primary concern was the availability of the TRW Aura PDB, the first drop of which is not planned until August 2001. It was agreed that EMOS representatives would provide the MPS team with the EMOS release dates that could be used to possibly adjust MPS delivery dates or release contents, if need be, to improve alignment with the EMOS test tool needs. If the Aura PDB is not available for the early MPS releases, then it was agreed that MPS development and operation would proceed by continuing to use the Aqua PDB. Ernest Quintin suggested as a workaround that the MPS team could use the Aura PDB schema without the data actually being available for initial MPS development, and was given the action to determine the need date for the PDB schema.

It was indicated that two PC units would be needed to host the MPS/Aura for dedicated Aura test support in Building 32.

The final item of discussion centered on the proposed use of the MPS/Aura to provide some of the needed instrument simulation functions. This proposal had evolved out of a previous meeting with Aura project, flight software (FSW), and instrument support team personnel. The MPS/Aura could be equipped with a 1553 interface to the Instrument Support Controller (ISC) and be used to provide capabilities beyond those that are currently planned for the TRW instrument simulator (ISIM). Angie Kelly agreed to coordinate a follow-up meeting with the necessary people to get any technical issues resolved before presenting the proposal for project funding.

Action Items

1. Ron Jones to provide MPS development team (Ernest Quintin) the preliminary Aura EMOS Schedule and specifically provide the Denver need date for MPS/Aura delivery to Raytheon for testing EMOS Build A. (Completed; e-mail sent from Ron Jones on 12/15/00 giving 7/3/01, as provided by Kevin Klem, as the Denver need date for MPS delivery.)

2. Ernest Quintin to provide Ron Jones the need date for Aura PDB in order to provide initial PDB access capabilities in MPS/Aura Release 2. (Completed; E. Quintin sent e-mail on 12/19/00 giving 3/19/01 as the need date, but noted that just knowing the schema changes to the PDB flat files by that date would be more important than actually having a PDB. In this way, MPS Release 2 development could begin and the MPS developers could populate the flat file formats with dummy data for internal testing.

3. Angie Kelly to set up meeting with Aura FSW and MPS personnel to get remaining interface issues resolved. (Completed; meeting held on 12/6, and the needed information was obtained.)

4. The MPS development team will assess the impact of including the two new user requested capabilities. The MPS/Aura requirements will be updated to include Aura spacecraft-specific differences, once these are better understood. An updated version will be needed by no later than 2/1/01, given the MPS/Release 1.0 target delivery date 3/15/01 and MPS/Release 2.0 target delivery date planned for 6/15/01.

Attendance List

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